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EXAMINER

HO, CHUONG T

ART UNIT PAPER NUMBER

2664

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/015,959

Applicant(s)

EGEVANG, KJELD B.

Examiner

CHUONG T. HO

Art Unit

2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892).   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1. The amendment filed 08/19/05 have been entered and made of record.
2. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.
3. Claims 1-21 are pending.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 11-12, 13-14, 15, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crow et al. (U.S. Patent No. 6,453,357 B1) in view of Ji et al. (U.S. Patent No. 6,888,838 B1).

In the claim 1, Crow et al. discloses all the following subject matter: a system to manage packet fragmentation for address translation, comprising:

- Receiving a plurality of packet fragments for a packet having a first address (see col. 5, lines 65-66, col. 6, lines 12-16);
- Wherein each packet fragment includes a packet fragment header (see figures 2A, 2B) having a packet offset value (48, 68) (see col 6, lines 17-18, for IP fragments, this may be determined from the fragment offset 48 and/or 68, see figures 2A, 2B, see col. 4, lines 3-8, the fragment offset 48 identifies the number of the primary fragment 32, For the IP embodiment, the fragment offset is one identifying that the primary fragment 32 is the first fragment of the set. The

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fragment set ID and offset 46 and 48 allow fragments in the set to be identified, associated and ordered, see col. 4, lines 28-30, the fragment set ID and offset 66 and 68 allow the secondary fragment 34 to be associated with the primary fragment 32 and ordered within the fragment set);

- Translating first address into a second address (see col. 6, lines 28-29, col. 6, lines 63-65, col. 5, lines 39-41, col. 7, lines 16-20) without reassembling (see col. 6, lines 47-49) packet fragments into packet (col. 6, lines 60-63) and
- Determining whether all packet fragment (see figure 4) for packet have been received using said offset value (see col 6, lines 17-18, for IP fragments, this may be determined from the fragment offset 48 and/or 68, see figures 2A, 2B, see col. 4, lines 3-8, the fragment offset 48 identifies the number of the primary fragment 32, For the IP embodiment, the fragment offset is one identifying that the primary fragment 32 is the first fragment of the set. The fragment set ID and offset 46 and 48 allow fragments in the set to be identified, associated and ordered, see col. 4, lines 28-30, the fragment set ID and offset 66 and 68 allow the secondary fragment 34 to be associated with the primary fragment 32 and ordered within the fragment set);
- Sending packet fragment using second address (see col. 6, lines 26-28).

However, Crow is silent to disclosing determining whether all packet fragments for packet have been received by indexing offset value in a verification table.

Ji et al. discloses determining whether all packet fragments for packet have been received by indexing offset value in a verification table (see col. 19, lines 10-17, claim 3,

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receiving a data packet from the communication network; extracting an IP address from a header of the packet; obtaining a segment and an offset of the IP address; using the segment to index an entry of the first lookup table).

Both Crow and Ji discloses packet segment. Ji recognizes determining whether all packet fragments for packet have been received by indexing offset value in a verification table. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Crow with the teaching of Ji to determine whether all packet fragments for packet have been received by indexing offset value in a verification table in order to process address translation out-of-order segments. Therefore, the combined system would have been enable the out-of-order segments need not be discard nor retransmitted. Thus, delay is minimized and network traffic reduced.

5. In the claim 11, Crow et al. discloses all the following subject matter: a system to manage packet fragmentation for address translation, comprising:

- Receiving a plurality of packet fragments for a packet having a first address (see col. 5, lines 65-66, col. 6, lines 12-16);
- Wherein each packet fragment includes a packet fragment header (see figures 2A, 2B) having a packet offset value (48, 68) (see col 6, lines 17-18, for IP fragments, this may be determined from the fragment offset 48 and/or 68, see figures 2A, 2B, see col. 4, lines 3-8, the fragment offset 48 identifies the number of the primary fragment 32, For the IP embodiment, the fragment offset is one identifying that the primary fragment 32 is the first fragment of the set. The

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fragment set ID and offset 46 and 48 allow fragments in the set to be identified, associated and ordered, see col. 4, lines 28-30, the fragment set ID and offset 66 and 68 allow the secondary fragment 34 to be associated with the primary fragment 32 and ordered within the fragment set);

- Translating first address into a second address (see col. 6, lines 28-29, col. 6, lines 63-65, col. 5, lines 39-41, col. 7, lines 16-20) without reassembling (see col. 6, lines 47-49) packet fragments into packet (col. 6, lines 60-63) and
- Determining whether all packet fragment (see figure 4) for packet have been received using said offset value (see col 6, lines 17-18, for IP fragments, this may be determined from the fragment offset 48 and/or 68, see figures 2A, 2B, see col. 4, lines 3-8, the fragment offset 48 identifies the number of the primary fragment 32, For the IP embodiment, the fragment offset is one identifying that the primary fragment 32 is the first fragment of the set. The fragment set ID and offset 46 and 48 allow fragments in the set to be identified, associated and ordered, see col. 4, lines 28-30, the fragment set ID and offset 66 and 68 allow the secondary fragment 34 to be associated with the primary fragment 32 and ordered within the fragment set);
- Sending packet fragment using second address (see col. 6, lines 26-28).

However, Crow is silent to disclosing determining whether all packet fragments for packet have been received by indexing offset value in a verification table.

Ji et al. discloses determining whether all packet fragments for packet have been received by indexing offset value in a verification table (see col. 19, lines 10-17, claim 3,

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receiving a data packet from the communication network; extracting an IP address from a header of the packet; obtaining a segment and an offset of the IP address; using the segment to index an entry of the first lookup table).

Both Crow and Ji discloses packet segment. Ji recognizes determining whether all packet fragments for packet have been received by indexing offset value in a verification table. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Crow with the teaching of Ji to determine whether all packet fragments for packet have been received by indexing offset value in a verification table in order to process address translation out-of-order segments. Therefore, the combined system would have been enable the out-of-order segments need not be discard nor retransmitted. Thus, delay is minimized and network traffic reduced.

6. In the claim 12, Crow et al. discloses a communication module to send packet fragments to second address (see col. 6, lines 28-29, col. 6, lines 63-65, col. 5, lines 39-41, col. 7, lines 16-20) (see col. 6, lines 47-49) (col. 6, lines 60-63).

7. In the claim 13, Crow et al. discloses all the following subject matter: a system to manage packet fragmentation for address translation, comprising:

- A source node (24) to send packet fragments for a packet having a first address (see col. 6, lines 28-29, col. 6, lines 63-65, col. 5, lines 39-41, col. 7, lines 16-20) (see col. 6, lines 47-49) (col. 6, lines 60-63);
- Receiving a plurality of packet fragments for a packet having a first address (see col. 5, lines 65-66, col. 6, lines 12-16);

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- Wherein each packet fragment includes a packet fragment header (see figures 2A, 2B) having a packet offset value (48, 68) (see col 6, lines 17-18, for IP fragments, this may be determined from the fragment offset 48 and/or 68, see figures 2A, 2B, see col. 4, lines 3-8, the fragment offset 48 identifies the number of the primary fragment 32, For the IP embodiment, the fragment offset is one identifying that the primary fragment 32 is the first fragment of the set. The fragment set ID and offset 46 and 48 allow fragments in the set to be identified, associated and ordered, see col. 4, lines 28-30, the fragment set ID and offset 66 and 68 allow the secondary fragment 34 to be associated with the primary fragment 32 and ordered within the fragment set);
- Translating first address into a second address (see col. 6, lines 28-29, col. 6, lines 63-65, col. 5, lines 39-41, col. 7, lines 16-20) without reassembling (see col. 6, lines 47-49) packet fragments into packet (col. 6, lines 60-63) and
- Determining whether all packet fragment (see figure 4) for packet have been received using said offset value (see col 6, lines 17-18, for IP fragments, this may be determined from the fragment offset 48 and/or 68, see figures 2A, 2B, see col. 4, lines 3-8, the fragment offset 48 identifies the number of the primary fragment 32, For the IP embodiment, the fragment offset is one identifying that the primary fragment 32 is the first fragment of the set. The fragment set ID and offset 46 and 48 allow fragments in the set to be identified, associated and ordered, see col. 4, lines 28-30, the fragment set ID and offset 66 and 68 allow the secondary



fragment 34 to be associated with the primary fragment 32 and ordered within the fragment set);

- Sending packet fragment using second address (see col. 6, lines 26-28).

However, Crow is silent to disclosing determining whether all packet fragments for packet have been received by indexing offset value in a verification table.

Ji et al. discloses determining whether all packet fragments for packet have been received by indexing offset value in a verification table (see col. 19, lines 10-17, claim 3, receiving a data packet from the communication network; extracting an IP address from a header of the packet; obtaining a segment and an offset of the IP address; using the segment to index an entry of the first lookup table).

Both Crow and Ji discloses packet segment. Ji recognizes determining whether all packet fragments for packet have been received by indexing offset value in a verification table. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Crow with the teaching of Ji to determine whether all packet fragments for packet have been received by indexing offset value in a verification table in order to process address translation out-of-order segments. Therefore, the combined system would have been enable the out-of-order segments need not be discard nor retransmitted. Thus, delay is minimized and network traffic reduced.

8. In the claim 14, Crow et al. discloses a destination node (destination port) having second address to receive packet fragments and reassemble packet fragments into

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packet (see col. 6, lines 28-29, col. 6, lines 63-65, col. 5, lines 39-41, col. 7, lines 16-20) (see col. 6, lines 47-49) (col. 6, lines 60-63).

9. In the claim 15, Crow et al. discloses all the following subject matter: a system to manage packet fragmentation for address translation, comprising:

- Receiving a plurality of packet fragments for a packet having a first address (see col. 5, lines 65-66, col. 6, lines 12-16);
- Wherein each packet fragment includes a packet fragment header (see figures 2A, 2B) having a packet offset value (48, 68) (see col 6, lines 17-18, for IP fragments, this may be determined from the fragment offset 48 and/or 68, see figures 2A, 2B, see col. 4, lines 3-8, the fragment offset 48 identifies the number of the primary fragment 32, For the IP embodiment, the fragment offset is one identifying that the primary fragment 32 is the first fragment of the set. The fragment set ID and offset 46 and 48 allow fragments in the set to be identified, associated and ordered, see col. 4, lines 28-30, the fragment set ID and offset 66 and 68 allow the secondary fragment 34 to be associated with the primary fragment 32 and ordered within the fragment set);
- Translating first address into a second address (see col. 6, lines 28-29, col. 6, lines 63-65, col. 5, lines 39-41, col. 7, lines 16-20) without reassembling (see col. 6, lines 47-49) packet fragments into packet (col. 6, lines 60-63) and
- Determining whether all packet fragment (see figure 4) for packet have been received using said offset value (see col 6, lines 17-18, for IP fragments, this may be determined from the fragment offset 48 and/or 68, see figures 2A, 2B, see col.

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4, lines 3-8, the fragment offset 48 identifies the number of the primary fragment 32. For the IP embodiment, the fragment offset is one identifying that the primary fragment 32 is the first fragment of the set. The fragment set ID and offset 46 and 48 allow fragments in the set to be identified, associated and ordered, see col. 4, lines 28-30, the fragment set ID and offset 66 and 68 allow the secondary fragment 34 to be associated with the primary fragment 32 and ordered within the fragment set);

- Sending packet fragment using second address (see col. 6, lines 26-28).

However, Crow is silent to disclosing determining whether all packet fragments for packet have been received by indexing offset value in a verification table.

Ji et al. discloses determining whether all packet fragments for packet have been received by indexing offset value in a verification table (see col. 19, lines 10-17, claim 3, receiving a data packet from the communication network; extracting an IP address from a header of the packet; obtaining a segment and an offset of the IP address; using the segment to index an entry of the first lookup table).

Both Crow and Ji discloses packet segment. Ji recognizes determining whether all packet fragments for packet have been received by indexing offset value in a verification table. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Crow with the teaching of Ji to determine whether all packet fragments for packet have been received by indexing offset value in a verification table in order to process address translation out-of-order segments. Therefore, the combined system would have been enable the out-of-order

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segments need not be discarded nor retransmitted. Thus, delay is minimized and network traffic reduced.

10. In the claim 18, Crow et al. discloses all the following subject matter: a system to manage packet fragmentation for address translation, comprising:

- Receiving a plurality of packet fragments for a packet having a first address (see col. 5, lines 65-66, col. 6, lines 12-16);
- Wherein each packet fragment includes a packet fragment header (see figures 2A, 2B) having a packet offset value (48, 68) (see col 6, lines 17-18, for IP fragments, this may be determined from the fragment offset 48 and/or 68, see figures 2A, 2B, see col. 4, lines 3-8, the fragment offset 48 identifies the number of the primary fragment 32, For the IP embodiment, the fragment offset is one identifying that the primary fragment 32 is the first fragment of the set. The fragment set ID and offset 46 and 48 allow fragments in the set to be identified, associated and ordered, see col. 4, lines 28-30, the fragment set ID and offset 66 and 68 allow the secondary fragment 34 to be associated with the primary fragment 32 and ordered within the fragment set);
- Translating first address into a second address (see col. 6, lines 28-29, col. 6, lines 63-65, col. 5, lines 39-41, col. 7, lines 16-20) without reassembling (see col. 6, lines 47-49) packet fragments into packet (col. 6, lines 60-63) and
- Determining whether all packet fragment (see figure 4) for packet have been received using said offset value (see col 6, lines 17-18, for IP fragments, this may be determined from the fragment offset 48 and/or 68, see figures 2A, 2B, see col.

4, lines 3-8, the fragment offset 48 identifies the number of the primary fragment 32, For the IP embodiment, the fragment offset is one identifying that the primary fragment 32 is the first fragment of the set. The fragment set ID and offset 46 and 48 allow fragments in the set to be identified, associated and ordered, see col. 4, lines 28-30, the fragment set ID and offset 66 and 68 allow the secondary fragment 34 to be associated with the primary fragment 32 and ordered within the fragment set);

- Sending packet fragment using second address (see col. 6, lines 26-28).

However, Crow is silent to disclosing determining whether all packet fragments for packet have been received by indexing offset value in a verification table.

Ji et al. discloses determining whether all packet fragments for packet have been received by indexing offset value in a verification table (see col. 19, lines 10-17, claim 3, receiving a data packet from the communication network; extracting an IP address from a header of the packet; obtaining a segment and an offset of the IP address; using the segment to index an entry of the first lookup table).

Both Crow and Ji discloses packet segment. Ji recognizes determining whether all packet fragments for packet have been received by indexing offset value in a verification table. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Crow with the teaching of Ji to determine whether all packet fragments for packet have been received by indexing offset value in a verification table in order to process address translation out-of-order segments. Therefore, the combined system would have been enable the out-of-order

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segments need not be discard nor retransmitted. Thus, delay is minimized and network traffic reduced.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2, 3-10, 16, 17, 19, 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Crow – Ji) in view of Aaker et al. (U.S. Patent No. 5,815,516).

In the claims 2, 16, 19, Crow et al. "identifying packet fragment having packet header (see figure 2A, 2B, 3, 4), with packet header having a packet identifier, translation information; retrieving translation information from packet header and translating first address into second address using translation information (see col. 4, lines 9-10, col. 5, lines 68 – col. 6, line 1, col. 5, lines 45-48, col. 6, lines 14-16, lines 20-25)

However, the combined system (Crow – ji) is silent to disclosing packet header having a packet length.

Aaker et al. (U.S. Patent No. 5,815,515) discloses packet header having fragment offset value, packet length, see figure 2, col. 4, lines 1-10);

Both Crow, Ji, and Aaker et al. discloses fragment packet in TCP/IP network. Aaker discloses packet header having fragment offset value, packet length; Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of the combined system (Crow – Ji) with the teaching of Aaker to provide a packet header having fragment offset value, packet length in order to store packet fragments in the queue. Therefore, the combined system would have been enable to determine whether all packet fragments for packet have been received.

12. In the claim 3, Crow discloses translation information comprises a port number (see col. 5, lines 2-4).

13. In the claim 4, Crow discloses wherein each of packet fragment includes packet fragment header having packet identifier, and a more bit (fragment set ID), and determining that storing each fragment having packet identifier and more bit set to predetermined values (see col. 4, lines 28-30, col. 5, lines 20-27).

14. In the claims 5, 17, 20, Crow discloses each offset value represents a position for packet fragment in packet, and determining whether all packet fragments for packet have been received using offset values comprises: collecting offset values; retrieving packet length; and determining whether all positions for packet are filled by collected offset values using packet length (see col 6, lines 17-18, for IP fragments, this may be determined from the fragment offset 48 and/or 68, see figures 2A, 2B, see col. 4, lines 3-8, the fragment offset 48 identifies the number of the primary fragment 32, For the IP embodiment, the fragment offset is one identifying that the primary fragment 32 is the first fragment of the set. The fragment set ID and offset 46 and 48 allow fragments in

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the set to be identified, associated and ordered, see col. 4, lines 28-30, the fragment set ID and offset 66 and 68 allow the secondary fragment 34 to be associated with the primary fragment 32 and ordered within the fragment set).

15. In the claims 6, 7, 8, 9, Crow et al. discloses wherein each packet fragment includes a packet fragment header having packet identifier, a more bit (fragment set ID) and an offset value (frag. Offset) (see figures 2, 6), and determining comprises: storing each packet fragment having packet identifier and offset value is a value other than zero; and determining whether all packet fragments for packet have been received using offset values (see col 6, lines 17-18, for IP fragments, this may be determined from the fragment offset 48 and/or 68, see figures 2A, 2B, see col. 4, lines 3-8, the fragment offset 48 identifies the number of the primary fragment 32, For the IP embodiment, the fragment offset is one identifying that the primary fragment 32 is the first fragment of the set. The fragment set ID and offset 46 and 48 allow fragments in the set to be identified, associated and ordered, see col. 4, lines 28-30, the fragment set ID and offset 66 and 68 allow the secondary fragment 34 to be associated with the primary fragment 32 and ordered within the fragment set).

16. In the claims 10, 21, Crow et al. discloses detecting an occurrence of a terminating condition prior to receiving all packet fragments for packet; and releasing packet fragments in accordance to manage packet (see col. 6, lines 1-4).

### ***Conclusion***



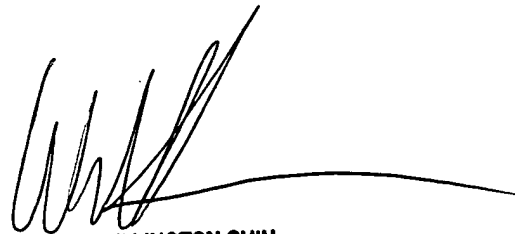
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHUONG T HO whose telephone number is (571) 272-3133. The examiner can normally be reached on 8:00 am to 4:00 pm.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

10/19/05



WELLINGTON CHIN  
REVISORY PATENT EXAMINER